

Remarks

The Office Action dated August 25, 2006 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-20 are pending in this application. Claims 1-20 stand rejected.

In accordance with 37 C.F.R. 1.136(a), a one month extension of time is submitted herewith to extend the due date of the response to the Office Action dated August 25, 2006, for the above-identified patent application from November 25, 2006, through and including December 26, 2006. In accordance with 37 C.F.R. 1.17(a), authorization to charge a deposit account in the amount of \$120.00 to cover this extension of time request also is submitted herewith.

The objection to the drawings under 37 CFR 1.83(a) is respectfully traversed.

Independent Claims 1 and 15 have been amended to recite pivotably mounting at least one ultrasonic phased array probe within a probe housing partially containing a liquid therein.

Independent Claim 11 has been amended to recite at least one ultrasonic phased array probe pivotably mounted within said probe housing.

Applicants submit that Figure 5 clearly shows the ultrasonic phased array probe pivotably mounted within the housing.

For the reasons set forth above, Applicants respectfully request that the objection to the drawings be withdrawn.

The rejection of Claims 1-3, 5, 11-12, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Nusbickel et al. (US 3,616,684) in view of Johnson (US 6,332,011) is respectfully traversed.

Nusbickel et al. describe an ultrasonic inspection carriage that includes a row of transducers mounted in a housing. The housing is rigidly affixed to a vertically disposed plate which is pivotally connected by parallel links to another vertically disposed plate rigidly affixed to the carriage. Notably, the housing of Nusbickel et al. can be pivoted, but the transducers are not pivotably mounted in the housing and are not pivotable within the housing.

Johnson describes a method of scanning a weld in a nuclear reactor vessel using a phased array probe positioned on top of a shroud head flange. The probe contains a linear array transducer having a plurality of elements configured to emit an ultrasonic beam. Notably, Johnson does not describe nor suggest mounting at least one ultrasonic phased array probe within a probe housing containing a liquid therein where the ultrasonic phased array probe is pivotable within the probe housing.

Independent Claim 1 of the present application recites a method of inspecting a portion of a weld that includes "pivotably mounting at least one ultrasonic phased array probe within a probe housing containing a liquid therein, each ultrasonic phased array probe comprising at least one transducer having a plurality of elements, the at least one ultrasonic phased array probe pivotable within the probe housing; attaching the probe housing adjacent an outer surface of the portion of the weld such that the liquid is adjacent the outer surface of the portion of the weld; and scanning the weld with the at least one ultrasonic phased array probe".

Nusbickel et al. and Johnson, alone or in combination, do not describe nor suggest a method as recited in Claim 1. Particularly, Nusbickel et al. and Johnson, alone or in combination, do not describe nor suggest pivotably mounting at least one ultrasonic phased array probe within a probe housing containing a liquid. Also, Nusbickel et al. and Johnson, alone or in combination, do not describe nor suggest that the ultrasonic phased array probe is pivotable

within the probe housing. Rather, Nusbickel et al. describe mounting a row of transducers in a housing, rigidly affixing the housing to a vertically disposed plate, and pivotally connecting the vertically disposed plate to another vertically disposed plate that is rigidly affixed to the carriage. Applicants submit that the Nusbickel et al. housing can be pivoted, but the transducers cannot be pivoted within the housing. Also, the Office Action dated April 5, 2006 admits, at page 3, that "Johnson does not specifically disclose or suggest an ultrasonic phased array probe within a probe housing". Applicants submit that because Johnson does not describe nor suggest an ultrasonic phased array probe within a probe housing, Johnson does not describe nor suggest that the ultrasonic phased array probe is pivotable within the probe housing. Therefore, combining the teachings of Johnson with the teachings of Nusbickel et al. do not describe nor suggest all the elements of Claim 1. Accordingly, Applicants submit that independent Claim 1 is patentable over Nusbickel et al. and Johnson, alone or in combination.

Claims 1-3 and 5 depend from independent Claim 1. When the recitations of dependent Claims 1-3 and 5 are considered in combination with the recitations of Claim 1, Applicants respectfully submit that Claims 1-3 and 5 likewise are patentable over Nusbickel et al. and Johnson, alone or in combination.

Independent Claim 11 of the present application recites an apparatus that includes "a probe housing containing liquid; and at least one ultrasonic phased array probe pivotably mounted within said probe housing so that said at least one ultrasonic phased array probe is located partially within said probe housing liquid, said at least one ultrasonic phased array probe pivotable within said probe housing".

Nusbickel et al. and Johnson, alone or in combination, do not describe nor suggest an apparatus as recited in Claim 11. Particularly, and at least for the reasons set forth above,

Nusbickel et al. and Johnson, alone or in combination, do not describe nor suggest at least one ultrasonic phased array probe pivotably mounted within a probe housing containing a liquid nor that the ultrasonic phased array probe is pivotable within the probe housing. Therefore, combining the teachings of Johnson with the teachings of Nusbickel et al. do not describe nor suggest all the elements of Claim 11. Accordingly, Applicants submit that independent Claim 11 is patentable over Nusbickel et al. and Johnson, alone or in combination.

Claim 12 depends from independent Claim 11. When the recitations of dependent Claim 12 are considered in combination with the recitations of Claim 11, Applicants respectfully submit that Claim 12 likewise is patentable over Nusbickel et al. and Johnson, alone or in combination.

Independent Claim 15 recites a method that includes "pivotably mounting at least one ultrasonic phased array probe within a probe housing partially containing a liquid therein, wherein the at least one ultrasonic phased array probe includes at least one transducer having a plurality of elements, and the probe housing is configured to position the at least one ultrasonic phased array probe at a predetermined location on the weld, the at least one ultrasonic phased array probe pivotable within the probe housing; attaching the probe housing adjacent an outer surface of the at least two pipes such that the portion of the weld to be inspected is positioned therein and the liquid is adjacent the outer surface of the weld; and scanning the portion of the weld with the at least one ultrasonic phased array probe, wherein the probe emits a steerable ultrasonic beam".

Nusbickel et al. and Johnson, alone or in combination, do not describe nor suggest a method as recited in Claim 15. Particularly, and at least for the reasons set forth above, Nusbickel et al. and Johnson, alone or in combination, do not describe nor suggest at least one

ultrasonic phased array probe pivotably mounted within a probe housing containing a liquid nor that the ultrasonic phased array probe is pivotable within the probe housing. Therefore, combining the teachings of Johnson with the teachings of Nusbickel et al. do not describe nor suggest all the elements of Claim 15. Accordingly, Applicants submit that independent Claim 15 is patentable over Nusbickel et al. and Johnson, alone or in combination.

For the reasons set forth above, Applicants respectfully request that the Section 103(a) rejection of Claims 1-3, 5, 11-12, and 15 be withdrawn.

The rejection of Claims 4, 7-10, 13-14, 16, and 18-20 under 35 U.S.C. § 103(a) as being unpatentable over Nusbickel et al. (US 3,616,684) in view of Johnson (US 6,332,011) and further in view of Sproule (US 3,938,372) is respectfully traversed.

At least for the reasons explained above, Nusbickel et al. and Johnson, alone or in combination, do not describe nor suggest a method as recited in independent Claim 1, an apparatus as recited in independent Claim 11, or a method as recited in independent Claim 15.

Sproule describes an ultrasonic probe having a liquid filled housing and a transducer positioned in the housing. The transducer is mounted on a carrying arm which moves around an arcuate plate in the housing thereby repositioning the transducer from a first location to a second location within the housing (see Figure 3).

Nusbickel et al., Johnson, and Sproule, alone or in combination, do not describe nor suggest a method as recited in independent Claim 1, an apparatus as recited in independent Claim 11, or a method as recited in independent Claim 15. Particularly, Nusbickel et al., Johnson, and Sproule, alone or in combination, do not describe nor suggest at least one ultrasonic phased array probe pivotably mounted within a probe housing containing a liquid nor that the ultrasonic phased array probe is pivotable within the probe housing. Rather, Nusbickel et al.

describe mounting a row of transducers in a housing, rigidly affixing the housing to a vertically disposed plate, and pivotally connecting the vertically disposed plate to another vertically disposed plate that is rigidly affixed to the carriage. Applicants submit that the Nusbickel et al. housing can be pivoted, but the transducers cannot be pivoted within the housing. Also, the Office Action dated April 5, 2006 admits, at page 3, that "Johnson does not specifically disclose or suggest an ultrasonic phased array probe within a probe housing". Applicants submit that because Johnson does not describe nor suggest an ultrasonic phased array probe within a probe housing, Johnson does not describe nor suggest that the ultrasonic phased array probe is pivotable within the probe housing. Further, Sproule describes that the transducer is mounted on a carrying arm which moves around an arcuate plate in the housing thereby repositioning the transducer from a first location to a second location within the housing (see Figure 3). The transducer does not pivot within the housing, the transducer moves from one location in the housing to another location in the housing as shown in Figure 3. Therefore, combining the teachings of Johnson and Sproule with the teachings of Nusbickel et al. do not describe nor suggest all the elements of Claims 1, 11, and 15. Accordingly, Applicants submit that independent Claims 1, 11, and 15 are patentable over Nusbickel et al., Johnson, and Sproule, alone or in combination.

Claims 4 and 7-10 depend from independent Claim 1, Claims 13-14 depend from independent Claim 11, and Claims 16 and 18-20 depend from independent Claim 15. When the recitations of dependent Claims 1 and 7-10, dependent Claims 13-14, and dependent Claims 16 and 18-20 are considered with the recitations of Claims 1, 11, and 15 respectively, Applicants respectfully submit that Claims 4, 7-10, 13-14, 16, and 18-20 are likewise patentable over Nusbickel et al., Johnson, and Sproule, alone or in combination.

For the reasons set forth above, Applicants respectfully request that the Section 103(a) rejection of Claims 4, 7-10, 13-14, 16, and 18-20 be withdrawn.

The rejection of Claims 6 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Nusbickel et al. (US 3,616,684) in view of Johnson (US 6,332,011) and further in view of Watts (US 3,202,218) is respectfully traversed.

At least for the reasons explained above, Nusbickel et al. and Johnson, alone or in combination, do not describe nor suggest a method as recited in independent Claim 1, or a method as recited in independent Claim 15.

Watts et al. is cited for teaching a sealing ring positioned between two clamping rings. Watts et al. is not cited for, and does not teach, a method that includes pivotably mounting at least one ultrasonic phased array probe within a probe housing containing a liquid. Therefore, Nusbickel et al., Johnson, and Watts et al., alone or in combination, do not describe nor suggest a method that includes pivotably mounting at least one ultrasonic phased array probe within a probe housing containing a liquid. Accordingly, Applicants submit that independent Claims 1 and 15 are patentable over Nusbickel et al., Johnson, and Watts et al., alone or in combination.

Claim 6 depends from independent Claim 1 and Claim 17 depends from independent Claim 15. When the recitations of dependent Claims 6 and 17 are considered in combination with the recitations of Claims 1 and 15 respectively, Applicants respectfully submit that Claims 6 and 17 likewise are patentable over Nusbickel et al., Johnson, and Watts et al., alone or in combination.

For the reasons set forth above, Applicants respectfully request that the Section 103(a) rejection of Claims 6 and 17 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Favorable action is respectfully solicited.

Respectfully submitted,



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Michael Tersillo  
Registration No. 42,180  
ARMSTRONG TEASDALE LLP  
One Metropolitan Square, Suite 2600  
St. Louis, Missouri 63102-2740  
(314) 621-5070